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ABSTRACT

Presented are the results of a 2-year project to develop and implement an instructional model for 200 identified talented and gifted students in grades K-8. Listed in an introductory section are project objectives (which include fostering improvement in creativity). Briefly described are such aspects of the program as student selection, project evaluation design (involving 32 K-4 level students participating in the pilot program and 29 control students), the pilot program curriculum (incorporating the areas of the affective, cognitive, and psychomotor domains), and tests used to evaluate program effectiveness. The seven project objectives are considered individually in terms of the pre- and posttest scores, project produced documents, conclusions, and recommendations. It is concluded that the project has been successful in planning and developing procedures and instruments for identifying gifted and talented students and that the program has proven to be effective in modifying or changing children's behavior in the areas of mathematics, reading recognition, reading comprehension, general information, vocabulary, general ability, and creativity. (SB)

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HUMAN INDIVIDUAL POTENTIALITIES: AN INNOVATIVE PROGRAM FOR THE TALENTED AND GIFTED

BY

STANLEY R. WURSTER, ED.D.
ARIZONA STATE UNIVERSITY

AND

KLONDA M. BALL
PROJECT COORDINATOR

TEMPE, ARIZONA
JULY, 1976

TABLE OF CONTENTS

SECTION		PAGE
I	Introduction	1
	Goals and Objectives	1
II	Program Description	2
	Selection of Subjects	3
	Pilot Program Evaluation Design	3
	Pilot Program Curriculum	4
	Program Effectiveness - Data Sources	7
III	Data Analysis and Findings	7
	Objective 1	8
	Objective 2	8
	Objective 3	9
	Objective 4	12
	Objective 5	14
	Objective 6	15
	Objective 7	16
IV	Summary Comments	17

LIST OF TABLES

TABLE		PAGE
I	Cognitive Mean Comparisons of Pilot and Control Group Test Results on PIAT, PPVT, and Draw-A-Person Tests.	11
II	Creativity Mean Comparisons of Pilot and Control Group Test Results on Torrance and Curiosity Tests.	13
III	Attitude Toward School Mean Comparisons of Pilot and Control Group Test Results on School Sentiment Index.	14
IV	Self-Concept Mean Comparisons of Pilot and Control Group Test Results on Self Esteem Inventory.	15
V	Personal, Social, and Total Adjustment Mean Comparisons of Pilot and Control Group Test Results on California Test of Personality.	17

HUMAN INDIVIDUAL POTENTIALITIES: AN INNOVATIVE PROGRAM FOR THE TALENTED AND GIFTED

SECTION I

INTRODUCTION

Every human being is unique and constantly changing. Every child seemingly has potential talent of some degree and kind. Each individual's contribution to society and his own personal satisfaction lies in his uniqueness and the extent to which he chooses to use his uniqueness, or talents, to contribute to societal and personal needs. Educators have been given the task of recognizing and then developing those traits and abilities that are unique within the individual so that the individual can utilize them for personal improvement and the benefit of others.

Arizona has responded to the special educational needs of the children in the state by enacting legislation designed to effect rather sweeping changes in special education programs by 1976. However, educational programs for gifted children have been overlooked or neglected in said legislation. Financial support for gifted programs in Arizona is far from adequate. Also, model programs for gifted and talented children are seriously needed to provide direction for others who recognize the special needs of this group of children and want to foster this natural resource, the uniquely gifted and talented.

The Kyrene School District has been aware for sometime of the unique potentialities possessed by individuals - - talents and gifts. They have also recognized the need to assist individuals in recognizing, appreciating, and developing their uniqueness. In addition, the Kyrene School District realized that model programs were needed to aid in this endeavor.

In pursuing this challenge the Kyrene School District, with the help of an ESEA Title III grant, sought to plan, develop, and implement an innovative program for talented and gifted children. This report summarizes the results of these efforts during the two years the program has been in existence: 1974-1976.

GOALS AND OBJECTIVES

The basic purpose of this Title III project was to develop and implement an exemplary model for identified talented and gifted students in the Kyrene School District, K-8, which would be applicable in other school systems in Arizona and throughout the country.

The project, in pursuing the above goal, sought to achieve the following

specific objectives:

1. By June 30, 1975, criteria for the identification of gifted and talented students will have been developed, and an exemplar program and basic curriculum guidelines will have been formulated for the development of individual uniqueness in identified gifted and talented children.

2. By May 30, 1976, curriculum which specifies the experiences and activities implemented with the gifted and talented children will be developed.

3. By May 30, 1976, students identified as gifted or talented and participating in a pilot program will show an improvement in high-level cognitive thinking as measured by pre-post test results of cognitive thinking measures.

4. By May 30, 1976, identified students participating in a pilot program will show an improvement in creativity as measured by pre-post test results of creativity measures.

5. By May 30, 1976, identified students participating in a pilot program will show an improvement in school attitude as measured by pre-post test results of a school sentiment measure.

6. By May 30, 1976, identified students participating in a pilot program will show an improvement in self-concept as measured by pre-post test results of a self-concept measure.

7. By May 30, 1976, the participating students in a pilot program will show a positive change in their personality profile as measured by pre-post test results of a personality test.

SECTION II

PROGRAM DESCRIPTION

In pursuing the objectives established, both standardized and non-standardized tests were administered; responses to interest, attitude, and personality inventories were collected; socio-grams, checklists, peer and self-nominating forms were included with those from parents and teachers. The data was analyzed with two questions in mind: (1) what measuring devices are relevant to our needs - - both for identifying the children and measuring behavior changes, and (2) what variables or behavioral changes will serve as indicators of project success.

Selection of Subjects

The initial screening for identifying gifted and talented, K - 8, occurred during the Spring, 1975. Scores from the group Otis-Lennon Test were collected and all children above the cut-off point of 118 I.Q. were given either the Standford-Binet, the WISC or both (N = 400). In addition to the concentrated I.Q. testing, other measuring devices used were: teacher and parent nomination forms and check-lists for measuring leadership, motivation, creativity and learning characteristics; the Torrance and Cummings tests of curiosity and creativity which measured curiosity, fluency, flexibility and originality; the Goodenough Draw-A-Person for developmental testing; Metropolitan Achievement scores of reading and mathematics; a "Way-Out" check sheet for deviant behavior; a self-nomination form and talent rating. Some 18,000 measuring devices were given.

In this effort to identify variables which might be useful in identifying gifted children, interrelationships were established between as many as 57 variables. This was accomplished by means of a correlation analysis and the development of a correlation matrix of the variables. Random computer selection chose the students (N = 200) whose scores were used in the correlation analysis.

The primary question to be answered by the extensive testing and analysis was, "What tests or instruments best serve to identify gifted and talented students?" and "Do these instruments select or identify the same student repeatedly?" The measures used were to identify the intellectually talented, academically able, creative or productive thinking. The talent areas were identified by nomination only--Phase III of the program, 1976-77, professional judges will identify children for talent mini-courses.

Following the correlation analysis, primary selection of gifted and talented children for the program was done using: IQ, Otis-Lennon or individual scores; achievement; creativity, curiosity test and Draw-A-Person; teacher nomination, self-nomination; originality, "Way-Out" test. The selection measures were narrowed from many to few (N = 8). It should be noted that although the Otis-Lennon test yields a lower IQ score than either the WISC or Binet, its correlation with these two IQ tests make it an attractive instrument to be used in the selection process.

The Pilot Program

Project Evaluation Design

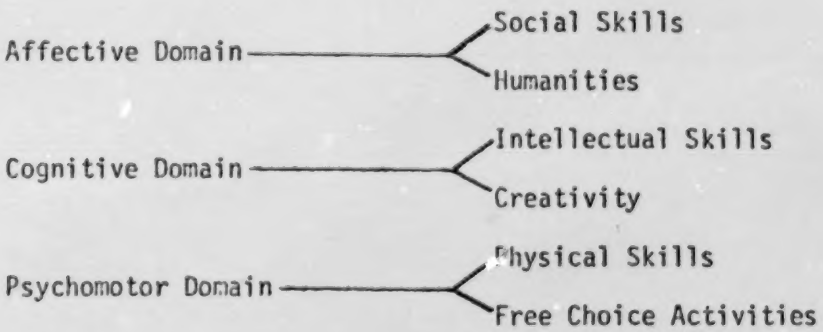
Utilizing the instruments identified for selecting gifted and talented children thirty-two (32) students were selected to participate in the pilot program (K-4). A similar group of students were selected to serve as a control or comparison group (N = 29). Of the thirty-two students selected to participate in the pilot program, thirteen (13) were in grades K-2 and

nineteen (19) were in grades K-4. A total of 13 (K-2) were from the Kyrene Del Norte School and 19 (K-4) were from the Waggoner School. Although it was planned to randomly select the students, this was not possible. Thus, for the 13 students selected from the Kyrene Del Norte School (K-2) a comparable group (N = 13) was selected from the Waggoner School. Also, for the 19 students (3-4) selected from the Waggoner School a comparable group (N = 19) was selected from the Kyrene Del Norte School.

Each group of subjects satisfied criteria established for identifying gifted and talented subjects. Each test administered was on a pre-post basis for both the project participants and the control group. Thus, the non-randomized control group design was employed: _O_X_O_
O O

Pilot Program Curriculum

The approach to the program was psychological with Maslow's hierarchy of needs established as the base, both, of the developmental philosophy and the curriculum. The primary overall goal of the project was to help each identified talented and gifted child develop his/her potentialities to the fullest. Incorporating this goal into the curriculum, the model became one of a three-dimensional man, rather than the traditional one-dimensional person viewed by educators. Personalized curriculum prescribed for the talented and gifted incorporated areas of the affective, cognitive and psychomotor domains. The curriculum was further divided into the sub-areas:



I. Affective Domain

A. Social Skills
1. group dynamics
2. discussion skills
3. self-concept
4. valuing
5. career awareness

B. Humanities
   1. mythology and metaphor
   2. literature
   3. background in art, drama, music
   4. historical perspective

II. Cognitive Domain

A. Intellectual Skills
   1. Instruction in perceptual/conceptual elements
      a. Didactic equipment and games
         (1) Figural
         (2) Symbolic
         (3) Semantic
      b. SOI lessons
         (1) Figural
         (2) Symbolic
         (3) Semantic
      c. Shape perception
         (1) Basic plan and solid geometric figures
         (2) Symmetry
      d. Color perception
         (1) Hue -spectrum range
            a. primary, secondary, tertiary colors
            b. complementary colors
         (2) Intensity - pure-neutral range
         (3) Value - light-dark range
      e. Spatial orientation
         (1) Personal
         (2) Two-dimensional
         (3) Three-dimensional
      f. Visual adjustment
         (1) Aerial perspective
         (2) Linear perspective
            a. one-point
            b. two-point
      g. Vocabulary elements from Latin and Greek
      h. Functional grammar

   2. Instruction in using basic processes
      a. Comprehension, storage, retrieval, and demonstration of basic knowledge
      b. Application of specific higher level thinking skills to knowledge
      c. General reasoning
         (1) Hypothesizing
         (2) Elimination logic and sentence reasoning
         (3) Deductive reasoning
         (4) Premises of Aristotelian formal logic
         (5) Inductive reasoning
         (6) Premises of Non-Aristotelian general semantics

d. Searching and sharing
   (1) Description
   (2) Narration
   (3) Exposition
   (4) Argumentation
   (5) Learning research skills
   (6) Teaching research skills to others
e. Evaluating
   (1) Distinguishing reality from fantasy
   (2) Distinguishing fact from opinion
   (3) Distinguishing among several kinds of truth: Intuitional, testimonial, mathematical, experimental
   (4) Distinguishing among reports, inferences, and value judgments
   (5) Extensive evaluation of self and others
   (6) Intensive evaluation of self and others

B. Creativity
   1. Experience in multiple talent areas
      a. Basic creativity: fluency, flexibility, originality
      b. Planning: Elaboration, sensitivity to problems, organizing abilities
      c. Communication: expressional fluency, associational fluency, word fluency
      d. Forecasting: Conceptual foresight, penetration, social awareness
      e. Decision making: experimental evaluation, logical evaluation, judgment
   2. Independent studies using a variety of cognitive skills and creative talents

III. Psychomotor Domain

A. Physical Skills
   1. Motor-perceptual activities
   2. Chants and rhythms
   3. General movement education
   4. Specific activities: modern dance, ballet, gymnastics, yoga, tai chi, etc.

B. Free choice activities
   1. Games equipment
   2. Arts and crafts
   3. Special projects - individual and small group in art, dance, dramatics, music

The above outline indicates or suggests the types of activities and experiences the pilot program children were exposed to during the time the pilot

program functioned. Each of the tasks (experiences) encompass a level within a given domain of the 3 taxonomies of educational objectives. In this fashion attempts were made to provide experiences which take the student through the various levels within the hierarchies of the various domains. The pilot program functioned from October, 1975 through May, 1976 with post testing completed during the last month of school.

Although the outline of the curriculum presented above lacks detail and specificity, a curriculum guide is in process and will be available from the Kyrene School District at a future date. A format has been developed for the curriculum guide which provides detail and specificity for the experiences and activities implemented with the gifted children.

Program Effectiveness - Data Sources

Cognitive

In the cognitive area, the Peabody Picture Vocabulary Test (PPVT), Peabody Individual Achievement Tests (PIAT), and the Draw-A-Person Test were utilized. The PIAT measures achievement in the areas of: general information, reading recognition and comprehension, mathematics and spelling.

Affective

In the affective area, the Coopersmith Self Esteem Inventory (SEI) and the California Test of Personality (CTP) were utilized. The SEI provides a measure for self-concept and the CTP for social, personal, and total adjustment.

Interest

For the interest area the School Sentiment Index was utilized which provides an assessment of the students' attitude toward school.

Creativity or Giftedness Area

Three Torrance tests, the Cummings Curiosity test and the Draw-A-Person test (DAP) were utilized for measuring creativity or giftedness.

All data used in evaluating the effectiveness of the project was collected by project staff, using pencil and paper tests, questionnaires, inventories, and check lists.

The pre and post test scores were analyzed by means of a student's t-test. The null hypothesis was tested for each of the 18 measures at the .05 level of significance.

SECTION III

DATA ANALYSIS AND FINDINGS

On the pages which follow, each of the seven (7) objectives stated previously in this report are considered individually. Evaluation of pre and post test scores, project produced documents, and observation of project

activities have been utilized to gather data relative to each of the previously stated objectives. Only students for which pre and post test scores were available were included in the data analysis.

Objective 1: By June 30, 1975, criteria for the identification of gifted and talented students will have been developed, and an exemplar program and basic curriculum guidelines will have been formulated for the development of individual uniqueness in identified gifted and talented children.

Data was collected on 400 subjects in the Kyrene District during the Spring, 1975. Measurements were obtained on as many as 57 variables. A sample of 200 subjects was selected, and by means of correlation analysis, interrelationships were established between these 57 variables for these 200 subjects. Utilizing the information provided, the selection measures were narrowed from a large number to as few as 8.

It was generally concluded that selection of gifted and talented subjects is best accomplished by using a variety of indicators. This is certainly logical when one considers that giftedness is multidimentional.

For purposes of identifying gifted children for the pilot program the following were used: I.Q., achievement, creativity, teacher & self nomination, and originality. Children with special talents were identified by nomination only.

General guidelines for the curriculum were developed and served as the basis for additional curriculum development. These general guidelines appeared in a project publication entitled, We Are Each Like The Unicorn - Unique and Rare. This publication outlines the philosophy, curriculum, qualifications for the program, teacher selection, concepts related to the gifted and talented program, and myths about gifted and talented students. This document has been submitted to ERIC for abstracting, indexing, and dissemination. It will appear in the near future in RIE (Research In Education).

Conclusion: The project has identified instruments, measurements, and means of identifying gifted and talented students. Also, basic curriculum guidelines were established which provided a basis for additional curriculum development.

Recommendation: Now that the project has been successful in identifying 8 variables to be used in identifying gifted children, it would appear natural to analyze these 8 variables in an attempt to rank order them or place them in a priority list. This of course assumes that perhaps a criterion measure could be identified for gifted children. Perhaps the first step would be to seek this criterion measure.

Objective 2: By May 30, 1976, Curriculum which specifies the experiences and activities implemented with the gifted and talented children will be developed.

The Kyrene School District is in the process of preparing a handbook or curriculum guide for dissemination. This document is to include an introduction, philosophical background, phases involved in developing a program, procedures for identifying gifted and talented students, curriculum design, possible classroom or environmental organizational structure for gifted programs, selection and roles for personnel, advisory council, aids for parents, developing a newsletter, and other concepts related to a gifted and talented program.

A major portion of the above mentioned document will be devoted to curriculum. It is anticipated that this section of the document will contain several sample lessons in the various sub-areas of the curriculum (see Section II - pilot program curriculum - this report). Learning experiences and activities implemented with the gifted and talented children are to be described with sufficient detail and specificity for a classroom teacher to implement the model presented. It is anticipated that the format developed will include such items as:

1. Time required (# of lessons) and for what grade levels
2. Concept to be developed
3. Behavioral objective(s)
4. Introduction or lesson approach
5. Materials needed
6. Resources
7. Lesson development (teacher tasks)
8. Student behavior engaged in (by task)
9. Level of domain aimed at (by task)
10. Terminal behaviors to be displayed (by task)
11. Recommended extended or supplementary activities

Conclusion: Curriculum or a description of those experiences or activities provided for the program or project for the gifted children has been developed and will be in a format suitable for widespread dissemination.

Recommendation: It would appear that preparations need to be made for demonstrating the activities and learning experiences which take place in the gifted program during the 1976-77 project year. I would anticipate that as teachers of gifted children become aware of the Kyrene project and gain access to the curriculum guide they will want to visit the project while it is in operation. This will provide a good opportunity for dissemination, but it also means planning must take place.

Objective 3: By May 30, 1976, students identified as gifted or talented and participating in a pilot program will show an improvement in high level cognitive thinking as measured by pre - post test results of cognitive thinking measures.

The Peabody Individual Achievement Tests (PIAT), Peabody Picture Vocabulary Test (PAVT), and the Draw-A-Person Test were administered on a pre - post basis for assessing changes in cognitive behavior resulting from program or project participation.

The PIAT tests provided information relative to mathematics, reading recognition, reading comprehension, spelling, general information, and a composite measurement. The PPVT test provides information relative to vocabulary skill, and the Draw-A-Person Test served as a developmental or artistic ability measure.

The results of the PIAT tests indicated that there was no significant differences between the groups in all areas when the project began (see Table I). This was also true for the PPVT test results. The pilot group made significant gains from pre to post test in all areas except spelling ($P < .01$). The control made significant gains from pre to post test in only the area of spelling ($P < .05$). The pilot group, even though comparable to the control group on the pretest, scored significantly higher than the control group on the post test in mathematics ($P < .01$) and general information ($P < .05$). (See Table I).

The changes in cognitive behavior when comparing the two groups was even more revealing. The change in behavior between pre and post tests for the pilot group was significantly greater than the change experienced by the control group in the areas of mathematics ($P < .05$), reading recognition ($P < .01$), reading comprehension ($P < .01$), general information ($P < .01$), and composite measurement ($P < .01$). This was not true in the area of spelling; the changes experienced by the two groups were not significantly different at the .05 level of significance. (See Table I).

The PPVT results indicated the two groups were not significantly different when the pilot program began or when the program ended. However, the pilot group experienced a significantly greater increase in vocabulary test performance than did the control group. ($P < .01$). The control group actually scored lower on the post test though it was not found to be significantly lower ($P > .05$). (See Table I)

The results of the Draw-A-Person Test were somewhat startling. The control group had a significantly higher performance level ($P < .01$) on the pretest than did the pilot group. The groups were also significantly different when post test results were compared, but on the post test the pilot group performed significantly better than the control group ($P < .05$). The pilot group had made significant gains from pre test to post test ($P < .01$) but the control group had not. The result of these differences in gains (8.7 vs 1.2) also indicated that the pilot groups' change in performance was significantly better than the control groups' ($P < .01$). (See Table I)

TABLE I

COGNITIVE MEAN COMPARISONS OF
PILOT AND CONTROL GROUP TEST
RESULTS ON PIAT, PPVT, AND DRAW-A-PERSON TEST

COGNITIVE AREA	PILOT GROUP (N = 31)	CONTROL GROUP (N = 29)	t-RATIO
	Pre M = 41.7	Pre M = 37.8	1.154
	s = 15.3	s = 9.7	
Mathematics	Post M = 47.6	Post M = 39.3	3.127**
	s = 11.6	s = 8.5	
	t-ratio 3.721**	t-ratio 1.083	
	change 5.9	change 1.5	2.124*
	Pre M = 39.3	Pre M = 41.0	.645
	s = 11.2	s = 10.0	
Reading	Post M = 46.3	Post M = 42.2	1.237
	s = 15.3	s = 9.6	
Recognition	t-ratio 5.887**	t-ratio 1.933	
	change 7.0	change 1.2	4.333**
	Pre M = 35.7	Pre M = 40.5	1.661
	s = 12.0	s = 10.1	
Reading	Post M = 42.4	Post M = 39.9	.933
	s = 11.5	s = 9.3	
Comprehension	t-ratio 5.297**	t-ratio .721	
	change 6.7	change -.6	4.774**
	Pre M = 38.1	Pre M = 38.1	.002
	s = 11.4	s = 10.6	
Spelling	Post M = 40.8	Post M = 39.7	.410
	s = 10.9	s = 9.5	
	t-ratio 1.980	t-ratio 2.165*	
	change 2.7	change 1.6	.685
	Pre M = 34.5	Pre M = 35.8	.358
	s = 16.0	s = 11.9	
General	Post M 43.2	Post M = 36.9	2.035*
	s = 12.4	s = 11.6	
Information	t-ratio 5.634**	t-ratio 1.191	
	change 8.7	change 1.1	4.200**
	Pre M = 188.7	Pre M = 192.6	.283
	s = 57.3	s = 49.3	
Composite	Post M = 220.1	Post M = 197.0	1.787
	s = 54.4	s = 44.8	
PIAT	t-ratio 8.716**	t-ratio 1.754	
	change 31.4	change 4.4	6.082**
	Pre M = 76.8	Pre M = 78.4	.595
	s = 11.0	s = 9.4	
Vocabulary	Post M = 81.7	Post M = 77.0	1.559
	s = 14.1	s = 8.9	
PPVT	t-ratio 3.426**	t-ratio 1.180	
	change 4.9	change -1.4	3.348**
(N = 32)	Pre M = 19.2	Pre M = 23.4	2.626**
	s = 5.9	s = 6.6	
Draw-A-Person	Post M = 27.9	Post M = 24.6	2.256*
	s = 6.5	s = 4.9	
	t-ratio 6.010**	t-ratio 1.004	
	change 8.7	change 1.2	3.956**

* Indicates significant difference between means at .05 level of significance
** Indicates significant difference between means at .01 level of significance

Conclusion: The program or project has been effective in fostering change in cognitive skills or performance levels in the areas of mathematics, reading recognition, reading comprehension, general information, composite achievement, vocabulary, and developmental or artistic ability.

Recommendation: It is recommended that consideration be given to modifying the cognitive testing program for the new project year. Since the composite achievement score on the PIAT and perhaps even the Draw-A-Person test scores do not seem to add any additional or meaningful information it would appear that they could be deleted from the future testing program. It is recommended that efforts be exerted to expand measurements in the cognitive areas to include such areas as science, mathematical concepts, mathematical applications, and perhaps even measurements in logical thinking as a cognitive skill. With the indicated success of the program in developing cognitive skills, efforts to determine just what cognitive skills can be improved by the activities and experiences provided by the program need to be exerted.

Objective 4: By May 30, 1976, identified students participating in a pilot program will show an improvement in creativity as measured by pre - post test results of creativity measures.

Three Torrance Tests, the Cummings Curiosity Test, and the Draw-A-Person Test (DAP) were administered on a pre - post basis for assessing changes in creativity or giftedness resulting from project or program participation.

The Torrance Tests included picture completion (I), free form (II), and lines and circles (III). A total or composite score of these three tests was also analyzed. The Cummings Curiosity Test was found to be correlated with the Torrance Test. This test consists of a picture such as an apple or several pictures which serve as stimuli. The student is asked to indicate questions raised in his mind about the picture. The DAP Test was found to correlate with the Torrance Tests as well as achievement. Thus, this was also used as an indicator of creativity or giftedness.

The DAP Test results were presented under objective 3 and, as presented, these test results indicate that the program was effective in producing changes in the pilot group which were significantly greater than control group changes. (See Table I). Thus, these results suggest that creativity is also fostered by the program. No additional discussion of the DAP Test results will be presented for objective 4.

The results of the Torrance Tests and also the Curiosity Test indicated that the pilot group made significant gains from pre to post test ($P < .01$) on all five tests. The control group made significant gains from pre to post test ($P < .01$) only on the Curiosity Test. (See Table II).

Test results in all five cases indicated that the pilot group made significantly greater gains between pre and post test ($P < .01$) than the control group. On the Torrance Test I (picture completion) the two groups were not significantly different

when the program began, but the pilot group scored significantly better than the control group on the post test ($P < .01$). This also resulted in significant differences in the groups' gains which was previously pointed out. (See Table II). On the remaining three Torrance Test means and also the Curiosity Test means, the control group performed significantly better than the pilot group at the time of the pretest. However, at the time the post tests were administered the pilot group performed significantly better than the control group in all four instances. On two of the Torrance Tests and also the composite score the control group decreased in performance, however, this decrease was not significant. ($P > .05$) (See Table II).

TABLE II

CREATIVITY MEAN COMPARISONS OF
PILOT AND CONTROL GROUP TEST
RESULTS ON TORRANCE AND CURIOSITY TESTS

TEST	PILOT GROUP (N = 32)	CONTROL GROUP (N = 29)	t-RATIO
	Pre M = 20.5	Pre M = 20.8	.123
	s = 8.8	s = 10.1	
Torrance I	Post M = 34.3	Post M = 21.3	3.677**
Picture completion	t-ratio 4.432**	t-ratio .200	
	change 13.8	change .5	3.325**
	Pre M = 56.9	Pre M = 71.0	2.650**
	s = 23.0	s = 18.2	
Torrance II	Post M = 94.8	Post M = 67.0	3.931**
Free Form	s = 32.3	s = 21.2	
	t-ratio 8.280**	t-ratio 1.222	
	change 37.9	change -4.0	7.311**
	Pre M = 74.6	Pre M = 95.5	2.638*
	s = 34.4	s = 26.1	
Torrance III	Post M =134.8	Post M = 88.6	3.934**
Lines & Circles	s = 53.2	s = 35.6	
	t-ratio 7.348**	t-ratio .969	
	change 60.2	change -6.9	6.140**
	Pre M =149.4	Pre M =187.4	2.923**
	s = 55.4	s = 44.9	
Torrance Total	Post M =259.6	Post M =176.6	4.411**
I + II + III	s = 85.0	s = 58.0	
	t-ratio 9.989**	t-ratio 1.091	
	change 110.2	change -10.8	8.092**
	Pre M = 12.2	Pre M = 21.5	2.021*
	s = 10.1	s = 23.8	
Curiosity Test	Post M = 55.5	Post M = 29.7	3.012**
	s = 59.3	s = 25.2	
	t-ratio 5.860**	t-ratio 3.354**	
	change 43.3	change 8.2	4.590**

* Indicates significant difference between means at .05 level of significance
** Indicates significant difference between means at .01 level of significance

Conclusion: The program or project has been effective in fostering change in creativity or giftedness.

Recommendation: It is recommended that the project staff seriously consider utilizing only the Curiosity Test as the measure of creativity during the next project year. This test, being correlated with the Torrance Tests, appears to provide valid information regarding creativity. The time required to administer the Torrance Test when compared to the time required to administer the Curiosity Test certainly makes the Curiosity Test an attractive instrument for use during the next project year.

Objective 5: By May 30, 1976, identified students participating in a pilot program will show an improvement in school attitude as measured by pre - post test results of a school sentiment measure.

The School Sentiment Index instrument was administered on a pre - post basis for assessing changes in student's attitude toward school resulting from or contributed to by participation in the pilot program or project.

Analysis of the results of the School Sentiment Index indicated that there were no significant differences between the pilot group and control group ($P > .05$). These two groups were not significantly different on the pretests or the post tests. Thus, there was also no significant differences in the groups' gains or changes from pretest to post test. In addition, neither group experienced significant changes in their attitudes toward school from the time the project began until it ended. (See Table III).

TABLE III

ATTITUDE TOWARD SCHOOL MEAN
COMPARISONS OF PILOT AND CONTROL GROUP TEST
RESULTS ON SCHOOL SENTIMENT INDEX

PILOT GROUP (N = 32)	CONTROL GROUP (N = 28)	t-RATIO
Pre M = 26.9	Pre M = 27.6	.456
s = 6.4	s = 6.0	
Post M = 26.7	Post M = 26.1	.339
s = 7.2	s = 6.0	
t-ratio .236	t-ratio 1.466	
change -.2	change -1.5	.873

Conclusion: The program or project has not been effective in fostering change in attitudes toward school. Attitude toward school is a seemingly stable variable and thus difficult to change or modify over a short period of time. Perhaps the time span of the project was too short to realize a change in the students' attitude toward school.

Recommendation: The rationale for administering the School Sentiment Index still exists. If these gifted children enjoy the experiences and activities provided by the program, they should ultimately like school better as a result of participating in the program. It is recommended that the School Sentiment Index be utilized during the next project year. The project will be functioning from August, 1976 or September, 1976 to May, 1977. Hopefully, with the short time added and modifications occurring in the program based upon this year's experience, the program can contribute to a change in participants' attitudes toward school.

Objective 6: By May 30, 1976, identified students participating in a pilot program will show an improvement in self-concept as measured by pre - post test results of a self-concept measure.

Coopersmith's Self Esteem Inventory (SEI) was administered on a pre - post basis for assessing changes in self-concept resulting from project or program participation.

The results of the data analysis indicated that there were no significant differences between the pilot group and the control group ($P > .05$). These two groups were not significantly different on the pretests or the post tests. Thus, there were also no differences in the groups' gains or changes from pretest to post test. In addition, neither group experienced significant changes in their self-concepts from the time the project began until it ended. (See Table IV).

TABLE IV

SELF-CONCEPT MEAN COMPARISONS
OF PILOT AND CONTROL GROUP TEST
RESULTS ON SELF ESTEEM INVENTORY

PILOT GROUP (N = 32)	CONTROL GROUP (N = 29)	t-RATIO
Pre M = 69.9	Pre M = 69.5	.115
s = 15.0	s = 13.4	
Post M = 71.4	Post M = 72.3	.236
s = 14.2	s = 15.6	
t-ratio .509	t-ratio 1.017	
change 1.5	change 2.8	.336

Conclusion: The program or project has not been effective in fostering change in participants' self-concept. This variable, much like attitude toward school, is a seemingly stable variable and requires a longer time period to be changed or modified.

Recommendation: It is recommended that the Self Esteem Inventory be utilized during the next project year. In addition, project staff need to be aware that change or modification of a student's self-concept requires conscious efforts toward such modification. Emphasis needs to be placed on constant success within the program. Approaches towards modifying student's self-concept need to be incorporated into pre-service or pre-program training and continued in an inservice training program.

Objective 7: By May 30, 1976, the participating students in a pilot program will show a positive change in their personality profile as measured by pre - post test results of a personality test.

The California Test of Personality (CTP) was administered on a pre - post basis for assessing changes in personality resulting from project or program participation. The CTP provides information or subtest scores for social adjustment, personal adjustment, and total adjustment.

Data analysis revealed that there were no significant differences between the pilot group and the control group in the areas of personal adjustment, social adjustment, or total adjustment ($P > .05$). These two groups showed no significant differences in these three areas on the pretests, post tests, and gains or changes. (See Table V).

Data analysis further revealed that only 34.4% of the pilot group increased in personal adjustment scores, 53.1% decreased and 12.5% remained the same between pretest and post test. Only 34.4% increased in social adjustment and 65.6% decreased. Also, 34.4% increased in total adjustment, 59.4% decreased, and 6.3% remained the same between pretest and post test. These changes between pretest and post test for the pilot group were not significant. Thus, the pilot group did not score significantly different between pretest and post test on personal adjustment, social adjustment, or total adjustment measures.

Results for the control group were similar to the pilot group. A total of 44.8% increased in personal adjustment, 51.7% decreased, and 3.4% remained the same. On social adjustment 27.6% increased, 65.5% decreased, and 6.9% remained the same. Total adjustment analysis revealed that 44.8% increased and 55.2% decreased. These changes between pretest and post test also were not significant for the control group.

TABLE V

PERSONAL, SOCIAL, AND TOTAL ADJUSTMENT
MEAN COMPARISONS OF PILOT AND CONTROL
GROUP TEST RESULTS ON CALIFORNIA TEST OF PERSONALITY

TEST	PILOT GROUP (N = 32)	CONTROL GROUP (N = 29)	t-RATIO
Personal Adjustment	Pre M = 38.4 s = 11.2 Post M = 37.5 s = 9.5 t-ratio .717 change -.9	Pre M = 39.1 s = 13.9 Post M = 39.7 s = 13.7 t-ratio .478 change .6	.196 .717 .846
Social Adjustment	Pre M = 39.8 s = 8.5 Post M = 39.2 s = 9.0 t-ratio .523 change -.6	Pre M = 42.4 s = 12.4 Post M = 40.3 s = 10.3 t-ratio 1.184 change -2.1	.952 .453 .675
Total Adjustment	Pre M = 78.2 s = 17.7 Post M = 76.7 s = 17.0 t-ratio .671 change -1.5	Pre M = 81.5 s = 25.5 Post M = 80.0 s = 23.0 t-ratio .606 change -1.5	.607 .624 .054

Conclusion: The program or project has not been effective in fostering change in participant's personal, social, or total adjustment as measured by the California Test of Personality. Once again, this variable is a seemingly stable variable and requires considerable time to be changed or modified.

Recommendation: It is recommended that the California Test of Personality be utilized during the next project year. Particular attention should be given to gifted students who remain in the program for a second year to see if the extended time in the program can produce significant changes in their personal, social, and total adjustment measures.

SECTION IV

SUMMARY COMMENTS

During the two years this project has been functioning, the project has been successful in planning and developing procedures and instruments for identifying gifted and talented students. Also, an exemplar program and basic

curriculum guidelines were formulated for the development of individual uniqueness in gifted and talented children. The project has moved from its planning stages into implementation. In this movement curriculum has been developed to provide gifted and talented children experiences and activities to aid in developing their uniqueness. The handbook or curriculum guide resulting from this project should serve as a valuable aid to others desiring to establish a program for gifted and talented children.

During these same two years the project or program has proven to be effective in modifying or changing gifted and talented children's behavior in the areas of mathematics, reading recognition, reading comprehension, general information, vocabulary, general ability, and creativity. The project or program has not proven to be effective in modifying or changing gifted and talented student's behavior in the areas of attitude toward school, self-concept, personal adjustment, social adjustment, or total adjustment.

It is recommended that the exemplar program planned, developed, and tested on a pilot basis be fully implemented during the third year of the project in grades K-4 and implemented on a pilot basis in grades 5-8. In this way data can be gathered to further validate the model or program in grades K-4, and data can also be gathered relative to its effectiveness in grades 5-8. During this same time curriculum can be written, tried, revised, and finalized specifically for grades 5-8.

The project and program has come a long way and accomplished a great deal in these two years. It is not unrealistic to expect even greater results during the next year.